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Please find below and/or attached an Office communication concerning this application or proceeding.

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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 09/852,966
Filing Date: May 10, 2001
Appellant(s): KADDURAH-DAOUK, RIMA

Cynthia M. Soroos
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 11/7/2006 appealing from the Office action mailed 10/07/2005.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

It is noted that the information disclosure statement (IDS) is submitted on 3/27/06. Although IDS has filed after prosecution has been closed, the submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner. Please refer to applicants' copy of the 1449 submitted herewith.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

GROUNDS OF REJECTION NOT ON REVIEW

The appellant's statement of the grounds of rejection to be reviewed on appeal is substantially correct. In addition to appelant's statement , the following ground of

rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief.

Double patenting rejection :issued since 6/4/2003

Double patenting rejection is maintained due to the reasons of the record(see paper no.10, mailed 6/4/2003). As requested by applicant in their response(see at page 7 remark section, paper no. 11, submitted 6/27/2003), this issue will be discussed upon a finding of subject matter that is allowable.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

Evidence entered by or relied upon by the examiner is being indicated immediately below.

U.S. Patent No. 5,702,688 (the '688 patent) to Yu et al. (12-1997)

U.S. Patent No. 5,324,731 (the '731 patent) to Kaddurah-Daouk et al. (06-1994)

WO 96/14063 to Kaddurah-Daouk et al. (05-1996)

U.S. Patent No. 5,256,649 (the '649 patent) to Le Fur et al. (10-1993)

U.S. Patent No. 4,871,718 (the '718 patent) to Carniglia. (10-1989)

U.S. Patent No. 5,321,030 (the '030 patent) to Kaddurah-Daouk et al. (06-1994)

Appellant noted that the evidence mentioned immediately above was submitted and found in attached Appendices B-G(see appeal brief, at page 11, col. IX). However, appendices B-G has not been found nor attached. Clarification is required.

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. Claims 68-70, 75-80 and 84-85 are rejected under 35 U.S.C. 103(a) as obvious over Yu et al(US5,702,688) in view of Kaddurah-Daouk et al(US US5324731 and WO9614063).

Claims are drawn to a method for increasing energy reserve, sustaining energy production and modulating energy flow in the skin comprising administering an effective amount of creatine or a salt thereof to a subject who is suffering from skin disorder(e.g. wrinkles) which is associated with free-radicals, aging, sun radiation, stress or fatigue.

Yu et al (US'688, hereinafter) teaches a treatment of abnormal skin conditions(skin aging, wrinkles, psoriasis, etc) associated with aging using an amphoteric composition comprising an effective amount of alphahydroxy acid(0.02-12Mole, converted to 0.02-12%), as an active agent and also an effective amount of creatine (or creatine compounds such as creatinine, 0.01-10Mole= about 0.01-10% in view of commonly known conversion method) as an amphoteric compound, see abstract; claim 1; column 34, lines 7-11 and examples.

Especially col. 32, lines 64-68, US'171 teaches wrinkle treatment utilizing a combination composition comprising not only alpha hydroxyl acids but also amphoteric agent in the treatment of skin damages such as age spots, skin wrikles, etc.

Applicant's claims differ in that the claims require creatine used to increase energy reserve, sustaining energy production and modulating energy flow in the skin.

In US'688 patent, although ceatine is not contemplated in examples or is not taught as only amphoteric agent in the patent, it would have been, however, obvious to one of ordinary skill in the art at that time of the invention was made to choose creatine compound to the subject suffering from skin aging and wrinkles among other amphoteric compounds, and further to expect cell energy balance when Yu et al(US'688) is taken in view of Kaddurah-Daouk et al(US US5324731 and WO9614063) because latter references teach additional skin benefit by creatine where creatine is effectively engaged in treating skin damages via modulating energy cell energy levels in addition to enhancing efficacy of active agent (i.e. alpha hydroxyacid release or pH balance) as suggested by US'688.

Firstly, Kaddurah-Daouk et al(US'731 hereafter) teach a creatine(or its salts) and it's use in the treatment of metastasis of epithelial cells via modifying energy level, see column 19, lines 25-42 (e.g. increasing energy reserve, sustaining energy production and modulating energy flow). US'731 teaches energy balance using creatine kinase in the treatment of other diseases such as psoriasis, wound healing, neurological disorders and cerebrovascular diseases, see column 49, lines 30-41

Secondly, Kaddurah-Daouk et al(WO'063, hereinafter) teach a treatment of diseases(e.g. neurological diseases) which are caused by abnormalities in an energy state, wherein the induction or inhibition of creatine kinase is a cause or a consequence of disease and modulating its activity would modulate energy flow and affect cell

function. WO'063 teaches that CK(creatine kinase)system is involved in energy buffering/energy transport activities and also involved in ADP and ATP levels intracellularly as well as ADP/ATP ratios. WO'063 specifically teaches that creatine (or its salts) is used for modifying energy of cells in stress via increasing energy reserve, sustaining energy production and modulating energy flow, see abstract and claims, especially page 39, line 8- page 40, line 9 and claim 4. WO'063 teaches various routes of administration including oral and topical application and dosage regimen, see page 33, lines 1-14. WO'063 teaches enhancement of therapeutic efficacy by co-administering beneficial secondary additives such as Q10 or nicotinamide that attenuate ATP depletion produced by malonate in vivo, see page 42, lines 7-13. WO'063 also teaches a secondary additives such as vitamins,see page 33, line 21.

When these references are combined together, the underlying mechanism(i.e. modulating skin cell energy using creatine compounds) is clearly present in the treatment of skin aging and wrinkle by administering a creatine compound regardless creatine is used as active agent or amphoteric compound as long as same effective amount (0.01-10M=%), taught in both Yu et al's reference and applicant's own disclosure at page 6, 3rd paragraph.

It is noted that creatine is also found in skin cell as well as brain, heart and muscle cells that is conventionally known knowledge* at the time of the invention was made(*see PTO-892 for the evidence). It is readily apparent to any skilled artisan that the energy level modification by creatine supplement is not limited to the only brain, muscle or heart cells but any cells that are associated with creatine kinase/creatine

phosphate energy system. Thus, one would have motivated to use a creatine compound to modify intercellular energy (e.g. increasing energy reserve, sustaining energy production and modulating energy flow) in the skin cell to treat the diseases associated with imbalanced creatine kinase level in addition to .

Thus, the claimed subject matter is not considered to be novel and not patentably distinct over the prior art of the record.

2. Claims 68-70, 75-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Fur et al(US 5,256,649) in view of Carniglia (US 4,871,718) and Kaddurah-Daouk et al(US 5,321,030 or WO9614063).

Le Fur(US'649, hereinafter) teaches a cosmetic composition comprising ATP generating system for counteracting skin aging, see abstract. US'649 also teaches that "ATP generating system" refers to any biological extract which is capable of increasing the respiratory cellular activity within mitochondria thus accelerating the cellular metabolism and ATP is generated.

Applicant's claims differ because they require creatine(or its salts).

However, it would have been obvious to one of ordinary skill in the art to substitute ATP generating system with creatine(or its salts) when Le Fur is taken in view of Carniglia(US '718) and Kaddurah-Daouk et al(US'030 or WO'063) because bothCarniglia and Kaddurah-Daouk et al 's patents together remedy the deficiencies of LeFur's.

First, Carniglia(US'718) teaches ATP is generated by creatine phosphate. Secondly, US'030 or WO'063 also teach that creatine or its analogs modulates the energy level in the skin cells via ATP utilization, see column 7, lines 45=60. One would have been motivated to make such substitution because creatine is easy to obtain and is proven for its efficacy and safety as being a effective precursor for phosphocreatine in vivo.

It is noted again that the modification of cellular energy level via increasing energy reserve, sustaining energy production and modulating energy flow is inherently possessed feature where the intracellular energy metabolism in skin cell is modified by creatine supplement because creatine is also found in skin cell as well as brain, heart and muscle cells as mentioned above in 103 rejection(supra).

Thus, one would have been motivated to do so, with reasonable expectation of success, because it is always desirable to extend the therapeutic modalities to enhance the quality of the treatment(e.g.cost reduction, improvement of effectiveness) and patient compliance that would give more choices to the users(e.g. individualized based on needs and preference). Additionally the techniques and skills are well within the skilled level of the artisan having ordinary skill as suggested by the cited references.

As to the claims 75-88, each patent teaches the critical elements required by the instant dependent claims as mentioned above in 103 rejection. Thus, the claims are properly included in this rejection.

As to the claims 72-73, where applicant requires creatine monohydrate or citrate as the effective species of the creatine salt, it is readily envisaged to skilled artisan that

creatine monohydrate or creatine citrate is encompaseed by the teaching, that is the pharmaceutically acceptable salts of creatine that is suggested by US030 or WO'063 because it is conventional knowledge* that creatine monohydrate or creatine citrate is pharmacologically effective creatine salts due to same pharmacore(responsible for th therapeutic effects), absent evidence to the contrary, see claim 1 (US'030) & claim 4(WO'063), and PTO-892*.

All the claimed subject matters are not considered to be patentably distinct over the prior art of the record.

Thus, all the claims are properly included in this rejection.

(10) Response to Argument

103 Rejection

Applicant's arguments have been fully considered but they are not persuasive. Applicant's arguments do not comply with 37 CFR 1.111(c) because they do not clearly point out the patentable novelty which he or she thinks the claims present in view of the state of the art disclosed by the references cited or the objections made. Further, they do not show how the amendments avoid such references or objections.

a. Yu et al in view of kaddurah-Daouk et al.

Applicant argues that Yu et al fails to teach or suggest administering an effective amount of creatine to the skin of a subject who is suffering from skin disorder

associated with free-radicals, aging, sun radiation, stress or fatigue, as claimed by applicant. Yu et al is limited to treatment methods including effective amounts of alpha-hydroxy acids, not methods using effective amounts of creatine compounds as claimed by applicant.(see remarks at page 4, lines 6-11).

Examiner disagrees.

Yu et al clearly teaches administering an effective amount of creatine compounds(as an essential agent for the patented invention of wrinkle or aging symptom treatment) to the patient who is suffering from skin changes associated with aging, see abstract and examples. Applicant's argument which allegedly states that Yu et al's teaching is limited to methods including effective amounts of alpha-hydroxy acids, not methods using effective amounts of creatine compounds as claimed by applicant, is not so critical because the claims are not particularly drawn to a treating skin conditions(e.g. aging) using an therapeutically effective amount of creatine(as an only active agent), but drawn to **administering an effective amount of creatine to the skin of a subject** who is suffering from skin disorder associated with aging as claimed by applicant , where the scope of instant claims are broader than what applicant argues.

It is noted that, the claims must be given their broadest reasonable interpretation. Therefore, the interpretation of claims (i.e. administering an effective amount of creatine compounds to the skin of the patient effective amount of creatine to the skin of a subject who is suffering from skin disorder

associated with aging as claimed by applicant) should be made based on the full definition wherein It is clearly taught or suggested by patentee.

Regardless creatine is used as active agent or as adjuvant assisting active agent's efficacy, the skin cell energy balance(e.g. increasing energy reserves, sustaining energy production, and modulating energy flow in the skin) would be inherently achieved once creatine or creatine compounds(e.g. creatinine or creatine derivatives) has been applied to the skin. The primar facie obvious is based on selection of creatine among many amphoteric agent but not based on inherentcy. Thus, once creatine is selected as a preferred amphoteric agent (Yu in view of Kaddurah-Daouk) and then the claimed energy balance are achieved.

MPEP clearly states that 103 rejection based in part of inherent disclosure in one of the references.

2112 Requirements of Rejection Based on Inherency; Burden of Proof [R-3]

The express, implicit, and inherent disclosures of a prior art reference may be relied upon in the rejection of claims under 35 U.S.C. 102 or 103. "The inherent teaching of a prior art reference, a question of fact, arises both in the context of anticipation and obviousness." *In re Napier*, 55 F.3d 610, 613, 34 USPQ2d 1782, 1784 (Fed. Cir. 1995) (affirmed a 35 U.S.C. 103 rejection based in part on inherent disclosure in one of the references). See also *In re Grasselli*, 713 F.2d 731, 739, 218 USPQ 769, 775 (Fed. Cir. 1983).

Thus, the prima facie obviousness in addition to inherent disclosure(as a part of the 103 basis) does not render the claimed invention patentably distinguished from prior art of the record.

I. SOMETHING WHICH IS OLD DOES NOT

BECOME PATENTABLE UPON THE DISCOVERY OF A NEW PROPERTY

"[T]he discovery of a previously unappreciated property of a prior art composition, or of a scientific explanation for the prior art's functioning, does not render the old composition patentably new to the discoverer." *Atlas Powder Co. v. Ireco Inc.*, 190 F.3d 1342, 1347, 51 USPQ2d 1943, 1947 (Fed. Cir. 1999). Thus the claiming of a new use, new function or unknown property which is inherently present in the prior art does not necessarily make the claim patentable. *In re Best*, 562 F.2d 1252, 1254, 195 USPQ 430, 433 (CCPA 1977). >In *In re Crish*, 393 F.3d 1253, 1258, 73 USPQ2d 1364, 1368 (Fed. Cir. 2004), the court held that the claimed promoter sequence obtained by sequencing a prior art plasmid that was not previously sequenced was anticipated by the prior art plasmid which necessarily possessed the same DNA sequence as the claimed oligonucleotides. The court stated that "just as the discovery of properties of a known material does not make it novel, the identification and characterization of a prior art material also does not make it novel." *Id.*< See also MPEP § 2112.01 with regard to inherency and product-byprocess claims and MPEP § 2141.02 with regard to inherency and rejections under 35 U.S.C. 103.

II. INHERENT FEATURE NEED NOT BE RECOGNIZED AT THE TIME OF THE INVENTION

There is no requirement that a person of ordinary skill in the art would have recognized the inherent disclosure *at the time of invention*, but only that the subject matter is in fact inherent in the prior art reference. *Schering Corp. v. Geneva Pharm. Inc.*, 339 F.3d 1373, 1377, 67 USPQ2d 1664, 1668 (Fed. Cir. 2003) (rejecting the contention that inherent anticipation requires recognition by a person of ordinary skill in the art before the critical date and allowing expert testimony with respect to post-critical date clinical trials to show inherency); see also *Toro Co. v. Deere & Co.*, 355 F.3d 1313, 1320, 69 USPQ2d 1584, 1590 (Fed. Cir. 2004)("[T]he fact that a characteristic is a necessary feature or result of a prior-art embodiment (that is itself sufficiently described and enabled) is enough for inherent anticipation, even if that fact was unknown at the time of the prior invention.");

Abbott Labs v. Geneva Pharms., Inc., 182 F.3d 1315, 1319, 51 USPQ2d 1307, 1310 (Fed.Cir.1999) ("If a product that is offered for sale inherently possesses each of the limitations of the claims, then the invention is on sale, whether or not the parties to the transaction recognize that the product possesses the claimed characteristics."); *Atlas Powder Co. v. Ireco, Inc.*, 190 F.3d 1342, 1348-49 (Fed. Cir. 1999) ("Because 'sufficient aeration' was inherent in the prior art, it is irrelevant that the prior art did not recognize the key aspect of [the] invention.... An inherent structure, composition, or function is not necessarily known.")>; *SmithKline Beecham Corp. v. Apotex Corp.*, 403 F.3d 1331, 1343-44, 74 USPQ2d 1398, 1406-07 (Fed. Cir. 2005) (holding that a prior art patent to an anhydrous form of a compound "inherently" anticipated the claimed hemihydrate form of the compound because practicing the process in the prior art to manufacture the anhydrous compound "inherently results in at least trace amounts of" the claimed hemihydrate even if the prior art did not discuss or recognize the hemihydrate)<.

For the same reason, applicant's argument (i.e. Le Fur et al fails to teach or suggest any methods using ATP generating system alone, see remarks at page 4, last paragraph) is not persuasive. Le fur et al teach or suggest the claimed invention because Le fur et al teach that a cosmetic composition containing ATP generating agent(e.g. creatine) is effectively applied to the skin of subject who suffers from skin changes associated with aging such as wrinkles, etc.

Applicant's arguments fail to comply with 37 CFR 1.111(b) because they amount to a general allegation that the claims define a patentable invention without specifically

pointing out how the language of the claims patentably distinguishes them from the references.

Secondary references (Kaddurah-Daouk et al or Carniglia) teaches energy balance(e.g. increasing energy, sustaining energy or modulating energy) in the skin cell controlled by creatine, creatine analogs, and pharmaceutically acceptable salts thereof, see previous office action. As notoriously known by skilled artisan, creatine monohydrate or creatine citrate is a pharmaceutically acceptable creatine salts which are commonly substituted for creatine in the pharmaceutical industries. And thus, the claimed invention is clearly suggested when these references are taken together and the teaching of these references together renders the claimed invention obvious and not patentably distinct over prior art of the record.

Obvious type- Double Patenting(DP) Rejection

As noted earlier, the following ground of rejection have not been withdrawn by the examiner, but they are not under review on appeal because they have not been presented for review in the appellant's brief.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

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